

## Long term mortality with cardiac resynchronization therapy

G. Anitha, Jestin Joseph, K. Jaishankar, S. Ram Kumar, U. Kalaichelvan, K. Latchumanadas, S. AjitMullasari, M. Ulhas Pandurangi

*The Madras Medical Mission, Chennai, India*

**Background:** Randomized clinical trials demonstrated that cardiac resynchronization therapy (CRT) improves survival in patients with congestive heart failure. The data of survival in patients treated in naturalized practice is sparse and no data is available from India.

**Methods:** The clinical and device data of patients who had undergone CRT implantation at least 5 years before were analyzed.

**Results:** The follow up data is available from 61 patients out of total 78 patients who have had CRT atleast 5 years before. The mean follow up period was 7.5 (range 5 – 12) years. There were 44 (72%) males. The mean age was  $58 \pm 13$  (range 29 – 67) years. None of the patients had AICD indication for secondary prevention of sudden cardiac death and all of them were in NYHA class III. Coronary angiography was normal at the time of implant in 61% (N = 37). Thirteen patients (21%) have died. Nine (70%) patients had ischemic heart disease. On the basis of the clinical records and device data, the cause of death was considered sudden in six (46%) patients. All of the patients who have died had documented AF and renal dysfunction.

**Conclusion:** Atleast one in five patients with CRT die over a follow up period of 5 years and nearly half of the deaths are sudden. Renal dysfunction and atrial fibrillation are the markers of highest risk.

## Valvular Heart Disease (RHD)

### Rheumatic heart disease in Kerala – A vanishing entity? An echo Doppler study in 5–15 years old school children (2013–2014)

Bigesh Nair, Sunitha Viswanathan, A. George Koshy

*Trivandrum Medical College, Thiruvananthapuram, India*

**Objective:** To study the prevalence of Rheumatic heart disease using echo Doppler in School Children of Trivandrum.

**Methods:** A total of 2060 students aged 5 – 15 years from five Government (1023) and two private schools (aided) (1037) were screened. Schools were randomly selected. All children and parents in each school were informed regarding the study, consent forms sent home through children. Children with informed written consent from parents were included in study. Subjects were interviewed using a proforma, a detailed clinical examination and echo Doppler study using Philips (HD-11) machine in schools. World heart federation 2012 criteria were used to identify RHD children. Data analysed using SPSS software.

**Results:** Of all 2060 children, 64.8% were males and 35.2% were females and mean age was  $12.6 \pm 2.1$  years. Clinical examination detected murmur in 184 subjects, of which 32 (17.4%) subjects detected to have a heart disease by echocardiographic evaluation. Out of 45 subjects with apical systolic murmur, 5(11.1%) subjects

had RHD by echocardiography, clinical prevalence being 2.4/1000 (95%CI 1.1-4.2). Clinical prevalence of RHD (by h/o of rheumatic fever and clinical apical systolic murmur was found in one child) to be 0.49 /1000(95% CI 0-1.4).

All subjects underwent echo Doppler evaluation. Echo Doppler evaluation diagnosed RHD in 12 children, of which 6 children had definite RHD, 6 had borderline RHD by WHF criteria, giving a prevalence of 5.83 /1000 (95%CI 2.5-9.1) school children. Definite RHD by WHF criteria was 2.9/1000 school children. Anterior mitral valve thickness >3mm and mitral regurgitation was present in all. Aortic regurgitation was seen in five school children by echo. Mitral regurgitation was grade 1 in 140 children and grade 2 in 6 children. None had severe MR by echo or hemodynamically significant MR. Of 146 children with mitral regurgitation, 24 children had apical systolic murmur. Anterior mitral leaflet prolapse suggestive of rheumatic etiology with pathological MR seen in 3 children. None of the subjects had commissural fusion and mitral stenosis. Two children had history of acute rheumatic fever on secondary prophylaxis, of which one had history of rheumatic chorea.

**Conclusion:** It is the first and largest school survey study in Kerala for Rheumatic heart disease using echo Doppler till date. Echo prevalence of RHD was several folds higher compared to clinical prevalence. Our study suggest that RHD prevalence by echo Doppler is less in Kerala (5.83/1000), due to its better socioeconomic living standards, better health indices, availability of prompt medical care and less overcrowding ( $4.4 \pm 1$  compared with  $6.4 \pm 2.3$ , RHEUMATIC study, Delhi) and higher literacy rates among females.

### A Comparative study of ivabradine and atenolol in patients with moderate mitral stenosis in sinus rhythm

K.T. Sajeer, G.N. Rajesh, C.G. Sajeer, B. Cicy, D. Vinayakumar, P. Kadermuneer, V. Haridasan, M. Dolly, M.N. Krishnan

*Department of Cardiology, Government Medical College, Kozhikode, India*

**Background:** Beta-blockers are frequently used in patients with mitral stenosis to control the heart rate and alleviate exercise-related symptoms. The objective of our study was to examine whether ivabradine was superior to atenolol for achieving higher exercise capacity in patients with moderate mitral stenosis (MS) in sinus rhythm. We also evaluated their effects on left ventricular myocardial performance index (MPI).

**Methods and Results:** Eighty-two patients with moderate mitral stenosis in sinus rhythm were randomized to receive ivabradine (n=42) 5 mg twice daily or atenolol (n=40) 50 mg daily for 6 weeks. Trans-thoracic echocardiography and treadmill test were performed at baseline and after completion of 6 weeks of treatment. Mean total exercise duration in seconds markedly improved in both study groups at 6 weeks ( $298.57 \pm 99.05$  sec vs.  $349.12 \pm 103.53$  sec;  $p=0.0001$  in ivabradine group,  $290.90 \pm 92.42$  sec vs.  $339.90 \pm 99.84$  sec;  $p=0.0001$  in atenolol group). On head to head comparison, there was no significant change in improvement of exercise time between ivabradine and atenolol group ( $p=0.847$ ). Left ventricular myocardial performance index did not show any significant change from baseline and at 6 weeks in both drug groups ( $49.8 \pm 8\%$  vs.  $48.3 \pm 7\%$  in ivabradine group,  $52.9 \pm 10\%$  vs.  $50.9 \pm 10\%$  in atenolol group;  $p=0.602$ ).